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Information on the Environmental Impact Statement
Intercounty Connector

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**Fact Sheet on Intercounty Connector
EPA's Review of the Environmental Impact Statement
August 1, 1997**

Four different plans, or alternatives, for the Intercounty Connector road are outlined in the Federal Highway Administration's Environmental Impact Statement. The following is a synopsis of the comments that the EPA had on each of the alternatives. The full comments are available in a letter with attachments which can be viewed and downloaded from the "Breaking Information" section of the EPA Region 3 homepage on the Internet at <http://www.epa.gov/region03>. Hard copies of these documents are also available by faxing a Freedom of Information Act request to Richard Van Holt, FOIA Officer, fax number (215) 566-5102.

Each Environmental Impact Statement receives a rating on the adequacy of the document itself, in other words, whether or not the information contained in it is sufficient to make informed determinations. These ratings are as follows: Category 1 - Adequate, Category 2 - Insufficient Information and, Category 3 - Inadequate.

Each alternative contained within the Environmental Impact Statement also receives a rating. These ratings are as follows: LO - Lack of Objections, EC - Environmental Concerns, EO - Environmental Objections, EU - Environmentally Unsatisfactory.**

Rating of the Adequacy of the Environmental Impact Statement

The Environmental Impact Statement for the Intercounty Connector was given a rating of Category 2 - Insufficient Information - because the document had certain areas of deficiencies. It needs:

- additional information about impacts to undisturbed parkland caused by the construction.
- more specific information about the function of wetlands that are impacted.
- more thorough description of the neighborhood impacts.
- a commitment to using High Occupancy Vehicle lanes or tolls on the new road.
- further modifications to two of the alternatives -- the Midcounty Highway (MM198) and the Northern Alignment.

Ratings for Each of the Proposed Alternatives in the Environmental Impact Statement

1) Master Plan Alternative -- Rating: Environmentally Unsatisfactory -- EPA Recommends that this alternative, as presented, be dropped from consideration.

- Elimination of the Paint Branch watershed as a **trout** source -- adverse impacts to Paint Branch, a Use III Natural Trout Water and a Special Native Trout Management Area. A total of 58 acres would be disturbed resulting in 54 tons of sediment being released into the spawning streams during construction, increases in stream temperature, decreases in water flow and the widening of the stream channel -- all contributing to the elimination of trout within the watershed.
- Impact to the greatest acreage of **wetlands** -- 22-23 forested wetlands nestled in large undisturbed stream valley parks. MPA contains long, bisecting crossings of these stream valley parks, particularly damaging to Piedmont Province. These impacts would affect flood control, water quality, wildlife habitat and break up one of the largest remaining contiguous forested areas in Montgomery County.
- Interrupts habitat for **migratory birds** -- the wetlands and forests which would be bisected are home to 27 species of permanent and winter resident neo-tropical migratory birds.
- **Recreational parklands** destroyed -- between 145-158 acres of parkland would be taken. This alternative threads its way from park to park with mile-wide crossings in some locations. Hiking and equestrian trails and areas of solitude would be impacted.
- Intrusion into **neighborhoods** -- this alternative is closer to more homes than any other, except the alternative to Upgrade Existing Roads, resulting in more proximity, noise and air pollution to surrounding neighborhoods.

2) Northern Alternative -- Rating: Environmental Objections -- EPA has objections to this alternative because the negative impacts are similar to the Master Plan Alternative, however some of the impacts are not as severe as those in the Master Plan.

- No impact to **trout** source
- Similar **wetlands** impacts.
- Six miles of impacts to **streams**.
- Potential impacts to the Patuxent River drinking water supply.
- Impacts to 492 acres of forest land.
- Parkland impacts are fewer but are still high at an estimated 100 acres.

3) Upgrade Existing Roads Alternative -- Rating: Environmental Concerns. From a natural resources standpoint, this alternative ranks well, having the fewest impacts of any alternative.

- because of the extensive interchange improvements, this alternative would improve the level of service at more intersections than any other alternative.
- falls short on other transportation measures when compared to other alternatives.
- will result in 139 residential and 35 business displacements.

4) Midcounty Highway - MD198 Alternative (MM198) -- Rating: Environmental Concerns. Although MM198 impacts fewer natural and human resources than any of the alternatives which require that a new road be built, considerable impacts would still result. However, if properly mitigated, EPA would not object to this alternative. Provides the best balance between environmental impacts and purpose and need.

- Wetland impacts of 10 acres.
- Forest land impacts of 236 acres.
- Park land impacts 40 acres..
- Potential impact to 45 residences and 7 businesses.
- Avoids critical trout spawning areas.

****Summary of rating definitions**

Environmental Impacts of the Action

LO - Lack of Objections - The EPA has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - Environmental Concerns - The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

EO - Environmental Objections - The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective

measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative.) EPA intends to work with the lead agency to reduce these impacts.

EU -- Environmentally Unsatisfactory -- The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not correct at the final EIS stage, this proposal will be recommended for referral to the President's Council on Environmental Quality.

Adequacy of the Impact Statement

Category 1 -- Adequate -- The EPA believes the draft EIS adequately sets forth the environmental impacts of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 -- Insufficient Information -- The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3 -- Inadequate -- EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Ms. Susan J. Binder
Division Administrator
Federal Highway Administration
The Rotunda, Suite 220
711 West 40th Street
Baltimore, Maryland 21211

Dear Ms. Binder:

In accordance with the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act and Section 404 of the Clean Water Act (Section 404), the U.S Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Intercounty Connector (ICC) project in Montgomery and Prince Georges counties, Maryland. This document fulfills the Intermodal Surface Transportation Efficiency Act (ISTEA) Major Investment Study (MIS) requirements with the Combined NEPA/404 procedures in place in Maryland.

During our review of the original DEIS for this proposal, we raised serious concerns about each of the build alternatives and determined that Alternative G was environmentally unacceptable. Subsequent to that document the Federal Highway Administration (FHWA) and the State Highway Administration (SHA), through the use of the Combined NEPA/404 procedures, facilitated a constructive interagency process aimed at resolving differences where possible, minimizing environmental impacts, and improving the environmental documentation for decision-making. EPA has been an active player in this process, and commends the FHWA and the SHA for their efforts. The process has led to a better understanding of project issues and concerns and improved working relationships among the various parties. In accordance with the Combined NEPA/404 procedures, EPA has formally concurred with the project Purpose and Need and the Alternatives Carried Forward into the DEIS.

Category 2 Rating for the Document

The process and documentation have significantly improved as a result of FHWA's and SHA's efforts and the use of the Combined NEPA/404 process. We have, in spite of this effort, identified a number of areas of deficiencies in the document. As a result, we have rated the document Category 2, which indicates that the DEIS contains insufficient information to fully assess the environmental impacts that should be avoided or mitigated to fully protect the environment. The issues identified below and further detailed in the enclosed technical comments should be addressed in the FEIS.

1. Additional information describing the types of impacts to undisturbed parkland caused by the construction and operation of a major freeway such as noise and littering impacts, wildlife mortality and the effect on passive recreation should be included in the FEIS. In addition, the FEIS should include a mitigation plan for these parkland impacts.

2. Specific wetland functional information tabulated by individual wetland or summarized by watershed should be included. Potential impacts to wetland functions by each alternative should be summarized in an attempt to distinguish the difference between each of the alternatives. A wetland mitigation plan should be included in the FEIS.

3. A more thorough description of neighborhood impacts of the ICC needs to be included in the FEIS. Using the rationale that the Master Plan Alternative (MPA) has been on record for a number of years, the DEIS tends to underestimate the neighborhood impacts for the MPA relative to the other alternatives.

4. The land use section of the FEIS should fully explain the land use sensitivity test methods, inputs and results. For example, the FEIS should identify and describe the alternative land use scenarios modeled and the results of this effort.

5. The freeway alternatives were modeled with both toll facilities and High Occupancy Vehicle (HOV) lanes yet there is no commitment to implement either of these. The FEIS should include a commitment to HOV and tolls, or the freeway should be modeled without them and this information included in the FEIS.

6. Finally, EPA believes that there are reasonably available modifications to the studied alternatives, such as interchange improvements and alignment options to the Midcounty Highway (MM198) and shifts in the Northern Alignment (NA), that need to be included in the FEIS. These modifications could potentially improve the function and/or reduce the impacts of these alternatives.

Environmentally Unsatisfactory (EU) Rating for the Master Plan Alternative

EPA believes that the potential adverse impacts associated with the proposed Master Plan Alternative (MPA) from the direct, indirect and cumulative impacts to aquatic and terrestrial resources and the human environment are unacceptable. Consequently we have given the Master Plan Alternative an EU (Environmentally Unsatisfactory) rating. An enclosure explains the EPA rating system.

EPA bases this rating on the potential adverse impacts to Montgomery County's last remaining reproducing brown trout stream, adverse impacts to wetland acreage and function, extensive stream physical habitat and water quality impacts, extensive parkland impacts and adverse impacts to existing neighborhoods and communities. A summary of these issues is found below. Additional comments supporting this rating and those of the other alternatives are contained in the enclosed technical comments.

EPA finds potential adverse impacts to the naturally reproducing brown trout stream in the Paint Branch watershed unacceptable. Paint Branch is a Use III Natural Trout Waters, a Special Native Trout Management Area and in 1995 the Montgomery County Council designated the area as a Special Protection Area (SPA). Considerable resources have been committed to this watershed and special land development regulations have been developed. Two subwatersheds of Paint Branch, Gum Springs and Good Hope Branch, provide virtually all of the critical spawning area for the trout population. The MPA is the only studied alternative that enters these subwatersheds. The remainder of EPA's discussion of the trout impact is focused in these subwatersheds.

The DEIS indicates that within Gum Springs and Good Hope Branch watersheds, a total of 58 acres would be disturbed resulting in 54 tons of sediment being released into the spawning streams during construction. The MPA would also permanently increase the impervious surface in Gum Springs and Good Hope Branch. Studies have indicated that relatively small amounts of impervious surface in a watershed result in stream water quality and physical habitat degradation. The SPA regulations acknowledge this potentially adverse impact by establishing a 10% impervious surface limit for all new construction. An increase of impervious surface above its current level would likely result in significant adverse water quality and physical habitat impacts to the most productive trout subwatersheds of Paint Branch.

The MPA would also result in small but measurable increases in stream temperature, decreases in base flow and an acceleration of the widening of the stream channel. All of the above would adversely alter the spawning stream's physical habitat and water quality. EPA believes that these impacts would likely eliminate the trout resource from the Paint Branch Watershed. Elimination of the trout would remove the existing use of this stream, a violation of EPA's antidegradation policy.

The MPA, with collateral road construction (the Rt. 28/198 connector), would impact the greatest acreage of wetlands of any alternative. The 22 to 23 acres potentially impacted by the MPA and the associated connector represents one of the largest wetland impacts reviewed by EPA in Maryland in recent times. This impact is particularly large for the Piedmont Province, since wetlands are relatively less abundant in this area, as compared to the Coastal Plain. The undisturbed nature of these wetlands nestled in large undisturbed stream valley parks provides valuable functions to the highly developed study area. The MPA contains long bisecting crossings of these stream valley parks, making the MPA potentially one of the most environmentally degrading alternatives among those considered.

The MPA wetland impacts are also located in sensitive areas such as the Paint Branch and the Anacostia River watersheds, both of which are the subject of intense study and restoration efforts. The MPA impacts more floodplains and associated forested wetlands than any alternative. The functions these forested wetlands provide in flood control, water quality improvement and wildlife habitat are valuable and only rarely found in an area as developed as the study area. The wetlands and adjacent parklands and woodlands constitute some of the largest remaining contiguous forest areas in Montgomery County. The wetlands and forests which would be

bisected by the MPA are home to 27 species of permanent and winter resident neo-tropical migratory birds. The Montgomery County Department of Park and Planning estimates that the MPA would fragment over 1080 acres of the migratory and forest interior bird habitat.

Construction of the MPA would impact approximately five and one-half miles of stream habitat. The loss of riparian corridors and physical stream habitat over such a large area represents a significant degradation to the local stream system. These streams are in watersheds where restoration is already underway to repair damage from previous highway construction and other development (for example, the Corps of Engineers funded Kenelworth Marsh Restoration project and stream restoration efforts on Paint Branch).

Perhaps one of the most striking impacts of the MPA is the impact on parklands. Between 145 and 158 acres of Section 4(f) parkland would be taken. Nearly one-third of the ROW of the MPA is located in existing or planned parks. The MPA threads its way from park to park with over mile wide crossings in some locations. The impact to the natural ecosystem, forest fragmentation, direct loss of habitat, increased wildlife mortality, and increased air and noise pollution are significant. Hiking trails, equestrian trails, passive recreation and pursuits of solitude would be adversely impacted. These impacts can be significantly minimized by other project alternatives. For example, the Midcounty Highway-MD198 Alternative (MM198) impacts only 40 acres and avoids the large stream valley park impacts that are characteristic of the MPA.

The adverse impacts to existing neighborhoods are also significant. The MPA is closer to more homes than any alternative except the Upgrade Existing Roads Alternative (UERA). The MPA results in more proximity, noise, and air pollution impacts than either the Northern Alternative (NA) or MM198. The MPA runs adjacent to the back yards of numerous homes and would separate others from the currently adjacent parkland. The MPA is arguably the most intrusive to neighborhoods of any alternative except the UERA.

Finally, it has been recognized in the DEIS that no single alternative will completely address the future transportation conditions. The purpose and need indicates the need for a comprehensive, study-area-wide, set of transportation solutions. Considering this, and given the magnitude of the natural environment and social impacts of the MPA, EPA recommends that the MPA, as described in the DEIS, be dropped from consideration. At least two other project alternatives exist (NA and MM198) which meet the purpose and need and minimize natural resource and human impacts.

EPA rating of the other alternatives

The following paragraphs summarize our comments on each of the other alternatives carried forward for detailed study.

Northern Alternative (NA): EPA rates the NA Environmental Objections (EO). The EO is based on adverse impact to wetlands, almost six miles of direct impact to streams, potential impacts to the Patuxent River drinking water supply, and 492 acres of forest land impacts.

Parkland impacts are less than those of the MPA, but at approximately 100 acres, are still high. As contrasted to the MPA, the trout resource is not threatened by this alternative. Water quality impacts described in the DEIS are the result of a storm water design that does not include infiltration in the Patuxent watershed. If this alternative is selected, more work needs to be performed on a storm water design that allows for infiltration, yet protects the Patuxent water supply. EPA also bases this rating on the 53 residential displacements. The potential Environmental Justice and Section 4(f) issues associated with the NA are also of concern. These potential impacts can be minimized or avoided (see our detailed comments for alignment option recommendations for minimizing the impacts of the NA).

The UERA: EPA rates the UERA Environmental Concerns (EC). From a natural resources standpoint this alternative ranks well, having the smallest impact to natural resources of any alternative. In addition, because of the extensive interchange improvements associated with this alternative, the UERA has the effect of improving the Level of Service (LOS) at more intersections than any of the alternatives studied. However the UERA falls short on the other transportation measures when compared with the other alternatives and will result in 139 residential and 35 business displacements.

Midcounty Highway-MD 198 Alternative (MM198): EPA rates the MM198 an EC (Environmental Concerns). Although the MM198 impacts fewer natural and human resources than any of the new facility alternatives, considerable impacts will still result if it is built. In particular we are concerned with the 10 acres of impact to wetlands, 236 acres of impact to forest land, and 40 acres of impact to parkland. The MM198 has the potential to impact up to 45 residences and seven businesses.

However, the MM198 avoids the critical trout spawning areas and has less wetland impact than either the NA or the MPA. As presented in the DEIS, the MM198 appears to be the least damaging to the environment overall. Additional reductions in potential impact may be possible by utilizing the NA between Rt. 29 and Rt. 650, since this would allow the MM198 to avoid the high quality Paint Branch watershed altogether. The MM198, if properly mitigated, may comply with the Section 404(b)(1) guidelines.

The MM198 provides a continuous identifiable east-west connection between I-95 and Gaithersburg which is one of the goals outlined in the ICC study. The MM198 also functions to provide the greatest overall 2020 east-west traffic flow. The MM198 provides a comparable level of vehicle miles traveled (VMT) on less congested (LOS A-E) highway links as the MPA.

The MM198 reasonably addresses the purpose and need (no project alternative meets all of the purpose and need) with the least cost and impact. In addition, given that the cost is one-half that of the freeway alternatives, the money saved could be invested in the modest improvements suggested by the Corps of Engineers (June 5, 1997 letter from Linda Morrison, COE to Alan Straus, SHA) thus improving its traffic function significantly. Taking into consideration all factors, EPA would not object to this alternative being selected if properly mitigated.

In summary, EPA recognizes that a project of this magnitude is expected to create impacts to the natural and human environment. From our review of the DEIS we have found that the MM198, with mitigation, offers the best balance between environmental impacts and the purpose and need.

Specific, detailed comments supporting our position are enclosed. Thank you for this opportunity to comment. We look forward to working with your office and the State Highway Administration to identify an environmentally sound transportation solution to the identified purpose and need. If you have further questions please contact Mr. Roy Denmark of my staff at 215-566-2721.

Sincerely,

W. Michael McCabe
Regional Administrator

Enclosures

cc: SHA
COE
FWS

WIDOEPA Region III Technical Comments
Intercounty Connector (ICC)
Draft Environmental Impact Statement (DEIS)
Montgomery and Prince Georges Counties, Maryland

Comments supporting EPA's rating:

The following comments are intended to give further basis for our ratings. First and foremost of our concerns regarding the ICC are the impacts to natural resources. EPA believes four key issues are important regarding the ICC and can be used to distinguish among the alternatives. These issues are the brown trout resource of Paint Branch, wetland and parkland impacts and neighborhood/community impacts. Correlated with these are stream impacts, forest land impacts, specimen tree impacts, forest interior bird habitat impacts, and threatened and endangered species habitat. These impacts are interrelated. An impact to one of these resources is usually associated with an impact to another or will cause an impact to another resource.

Natural Resources (from Section IV, Environmental Consequences):

Stream impacts:

Both the Northern Alternative (NA) and the Master Plan Alternative (MPA) would cause 5.5 to 6 miles of direct stream impacts, resulting in a major alteration of the study area streams. This in turn will result in temperature increases from loss of riparian cover, water quality impacts from sedimentation during construction and a permanent loss of medium to high quality natural stream habitat. Channelized sections of streams are susceptible to head cutting and erosion of the stream banks, resulting in sediment transport downstream. Transported sediments are deposited downstream causing the stream to widen, accelerating bank erosion and causing more sediment transport and physical habitat degradation. The result is lower species diversity and smaller populations of fish and aquatic insects.

The NA would result in potential impacts to streams in the Patuxent River watershed that have excellent water quality, as determined by the macroinvertebrate index developed using EPA's Rapid Stream Bioassessment Procedures. The sites of the potential impacts from the NA are separated from the lower Patuxent River by the Patuxent Reservoir. This limits their function as part of an integrated stream system. For example, the reservoir interrupts the exchange and migration of aquatic species and organic matter between this area and downstream reaches. This, in effect, reduces the downstream impacts of the NA.

The MPA would result in potential impacts to a greater number of higher order streams and floodplains, some of which are high quality streams. The streams impacted by MPA flow into the Anacostia and Potomac River watersheds. These streams, with moderate to good water quality and habitat, are integral to supporting the living resources of the Anacostia and Potomac systems. Streams provide an organic source for aquatic insects to feed which in turn provide a food source for fish.

The living resources and physical habitat of the Anacostia River have been the focus of considerable attention. For example, an Army Corps of Engineers restoration plan has been implemented (USACOE Anacostia River and Tributaries Final Integrated Feasibility Report and Environmental Impact Statement, 1994) in the Anacostia River. The Anacostia River is also one of seven targeted “areas of concern” identified in the United States as part of a Federal Interagency ecosystem management restoration program. Stormwater retrofits, wetland restoration and habitat improvements are being planned in the Anacostia watershed. These efforts are focused at meeting three goals included in the “Biennial Federal Workplan for the Anacostia River Watershed”; 1) increase the acreage and quality of wetlands, 2) increase forest cover and forested riparian corridors and 3) restore and enhance aquatic diversity.

The MPA impacts the streams in the Paint Branch watershed (a subwatershed of the Anacostia River) more than the other alternatives. This is a critical factor because Paint Branch is a designated Use III Natural Trout Waters and is Montgomery County’s last remaining reproducing brown trout stream (see below). Furthermore, stream restoration efforts identified in the aforementioned 1994 EIS have already been implemented in the Paint Branch.

Options to reduce impacts associated with the MPA are restricted by the development that surrounds the MPA corridor. Because of the existence of more open land and a number of alignment options, the NA offers more opportunities to reduce impacts as compared to the MPA. In fact, depending on the option chosen, the NA could have fewer stream impacts than the MPA.

Except for the UERA, the MM198 has the least amount of stream impact of all the alternatives. The MM198 would impact less than three miles of streams, which is approximately half the impact of the NA or MPA. The MM198 completely misses the critical trout spawning areas (Good Hope Branch and Gum Springs), but does impact the upper Paint Branch, which has good water quality. Even this impact may be avoided if the MM198 is modified to follow the NA between Rt. 29 and Rt. 650.

In summary, the MPA has potentially the greatest amount of stream impacts and the least opportunity to avoid stream impacts. The MPA would impact the Paint Branch more than the other project alternatives. The NA does not impact the brown trout resource of Paint Branch and with modifications, could be designed to have less impact relative to the MPA. The MM198, by far, impacts the least amount of stream length of the three new alignments and avoids the critical fisheries resource in Paint Branch.

Trout:

The direct stream impacts listed above coupled with deforestation and an increase in impervious surface will lead to degradation of stream quality and habitat in each of the watersheds crossed by the ICC. This is a particularly critical issue in the Paint Branch watersheds where a naturally reproducing brown trout population is found.

Paint Branch is a Use III Natural Trout Waters and, in addition, is a Special Native Trout Management Area, the first such designation in Maryland. Montgomery County and the State of Maryland have invested considerable effort in protecting this resource. In 1995 the Montgomery County Council designated this area as a Special Protection Area (SPA) (DEIS III-107). Special attention, efforts and resources have been committed to this watershed. For example all new construction in this SPA is limited to only 10% impervious surface (Montgomery County SPA Regulations Sec 19-62.c). Comparative watershed studies indicate that watersheds containing 10% impervious show signs of stream degradation (Klien R.D. DEIS Page IV-198). The MPA would cause a significant increase in the impervious surface in several subwatersheds. For example in the Good Hope tributary, the single most important spawning area in Paint Branch, the MPA would cause a 14% increase in impervious surface.

The critical spawning areas for the brown trout are found in the Gum Springs and Good Hope tributaries of Paint Branch. These two tributaries provide virtually all (85%) of the spawning areas for the entire Paint Branch system. While each of the alternatives cross some portion of the Paint Branch watershed, the MPA stands alone as the alternative that will impact these critical spawning areas. The MM198 and NA do not enter the Gum Springs and Good Hope watersheds.

Any major construction project in the watershed will adversely impact the physical characteristics and water quality of these streams. In fact, much smaller road improvements in these watersheds over the last 18 years have resulted in observable and measurable physical impacts to these streams (personal communication, Charles R. Gougeon, Central Regional Fisheries Biologist, Maryland Department of Natural Resources). Physical habitat and structure is as much of a limiting factor for trout as is water quality (Charles R. Gougeon). Trout are a cold water species dependent on high quality water and clean gravelly to rocky stream bottoms. The MPA a very large, long term, construction project represents a clear threat to physical habitat and water quality of these critical spawning areas.

The DEIS lists several predicted impacts from the MPA to these critical trout spawning tributaries. Included are 58 acres of disturbed area in the watershed and 54 tons of construction sediment yield. Other impacts include potential channel enlargement from increased storm flows along with long term episodic sedimentation from this source (which is in addition to the 54 tons of construction yield), and a small but measurable increase in temperature (less than 2%) and decrease in base flow (less than .5%). As mentioned before, a 14% increase in impervious surface (a total of 23 acres), is also anticipated. Deicing and overall

water quality impacts to the spawning tributaries were also documented (DEIS, IV-167). The combined effect of these water quality and physical habitat impacts will jeopardize this resource.

The DEIS describes the trout population as a sensitive resource which may be adversely impacted by the results of earth moving, deforestation and increased impervious surface in the watershed. Based on our review of the DEIS, EPA has concluded that the MPA would result in unacceptable impacts to the brown trout resource.

Antidegradation:

The removal of an existing use, or the qualities of the water that support that use, is considered antidegradation under the Clean Water Act. The elimination of the trout from these tributaries clearly would result in a degradation of an existing use. This outcome is squarely in violation of EPA's anti-degradation policy and is not authorized under 40 CFR 131.10(h)(1). EPA's Antidegradation policy states that existing in-stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected (40CFR 131.12 (a)(1)). EPA's interpretation of the data provided in this document suggests that the existing use, Use III Natural Trout Waters, will be degraded by the massive construction project that crosses two of the key trout spawning tributaries. This, in our view, precludes the selection of the MPA.

Storm water:

All of the impacts to water quality parameters noted above assume the implementation of an aggressive storm water management concept plan that has not been tested on such a large scale. Aggressive monitoring and remediation programs would be required to insure its success. This would demand a long term and prioritized commitment to maintenance of the storm water management facilities for the life of the transportation facility.

The reliance on bioretention, infiltration and mixing zones as key elements of the storm water control plan are largely untested (Storm Water supplement, DEIS). Bioretention is still in the research stage with no pollutant removal data available. Studies performed by the Maryland Department of the Environment (MDE) show that infiltration basins fail at a rate of 60% in the first two years. This indicates that the efficiency rates modeled in the document may be unrealistic. While EPA encourages the use of innovative techniques for protecting environmental conditions, the use of these unproven techniques for the critical Paint Branch trout spawning areas is not recommended.

Parkland Impacts (from Section V ; Section 4(f) Evaluation):

The natural resource impacts of the ICC are interrelated. The stream valley parks integrate many of these impacts. For example, stream alterations in Paint Branch may adversely impact trout, and parkland impacts will include stream alterations. Deforestation within park boundaries will contribute to stream degradation as well as wildlife and interior forest dwelling bird impacts. The discussion of parkland impacts should include a summary of those natural resource impacts which would occur within the park.

This section of the DEIS fails to fully describe the impacts to each of the Parks the ICC crosses. Take the Rock Creek crossing as an example, the DEIS lists acreage taken, linear feet of crossing, number of streams crossed, estimated cut and fill and forested area fragmented. Visual impacts are scarcely discussed and noise is indicated dryly in DBA levels at 300 feet. Many of the natural resource impacts from the ICC discussed in earlier sections will occur in the parks and should be summarized here. Impacts not disclosed are:

- 1) Increased air pollution in the interior park locations currently experiencing ambient levels.
- 2) The loss of a quiet and solitude caused by the automobile and truck traffic. This noise is particularly acute at bridge crossings where noise tends to reverberate and abatement may not be practical.
- 3) The continuous flow of trash from the overpasses, littering tree tops and the ground, tire fragments, car parts and plastic containers falling onto adjacent parkland.
- 4) Impacts to forest dependent wildlife. For example, reptiles, amphibians and mammals attempting to cross the highway will likely be killed. Mortality will be especially high the spring breeding season and juvenile dispersion in the fall. (FWS, draft comments ICC DEIS).
- 5) The loss of habitat for a wide range of species including forest interior dwelling birds.
- 6) Shading impacts of the bridges.
- 7) The loss to the public, now and for future generations, of this vital, scarce, peaceful and natural open space, which according to the DEIS 2020 predictions, will be even more needed at that time.

The MPA adversely impacts parkland more than any other alternative. The MPA will eliminate up to 158 acres of parkland (14% of ROW acreage total) and result in 4.5 to 5 miles of linear encroachment (nearly one third of its total length) to existing or proposed parks. This represents a major degradation to the study areas park system. Hiking trails, equestrian trails, passive recreation sites and activities will be impacted and compromised in the Mill Creek Stream Valley Park, Rock Creek Regional Park, North Branch Stream Valley Park, Northwest Branch Regional Park, Upper Paint Branch Park and Little Paint Branch Park. For example highway noise alone will impact 320 to 370 acres of parkland (using 300 foot impact either side of ROW).

These parks were set aside in the public interest. Their value to an urbanized area can not be underestimated. The ICC proposal, and the MPA in particular, forces a decision on what level of impact to this resource is acceptable for the objective of moving people and goods more efficiently.

In summary, taking into consideration the loss of this public resource, EPA finds these to be unacceptable impacts. Furthermore, considering that there appear to be prudent and feasible alternatives to the use of these parklands for transportation purposes, EPA believes that the use of the parklands associated with the MPA may not comply with the requirements of Section 4(f) as described in this section. The MPA impacts the greatest number of park resources of any alternative and these impacts can be significantly minimized by other alternatives.

Mitigation: No details are provided in the DEIS. No potential parkland replacement sites have been identified. Consequently EPA can not evaluate whether parkland taken by the ICC proposal can be replaced. EPA recommends, if the MPA is not selected, that perhaps it would be in the public interest to dedicate its non-parkland ROW to the regional park system to offset any parkland impacts of the selected alternative.

Wetlands:

Both of the freeway alternatives (NA and MPA) impact a significant acreage of wetlands (15 to 26 acres depending on the options chosen). If permitted, this project would result in greater impacts to wetlands than have been authorized for any individual project in the Baltimore District in recent times. This acreage is particularly large for the Piedmont physiographic province which has less wetland acreage than the adjacent coastal plain. Furthermore, forested wetlands which have high rate of loss historically in Maryland would be significantly impacted (Tiner, 1994).

The loss of this large amount of wetlands would severely impair the long standing goal of no net loss of wetlands in the Chesapeake Bay and jeopardize the State of Maryland goal of increasing the net acreage of wetlands in the state. The watersheds where these impacts occur are already highly developed or planned to be developed. The remaining land is protected by stream valley parks and is largely forested. Lands suitable for wetlands replacement are scarce. These factors will make replacement of these wetlands difficult and expensive. It is possible that some watersheds will not be able to support replacement at all, resulting in a loss of wetlands and important functions to those watersheds.

The DEIS gives a general overview of the wetlands in the study area. The DEIS states that wetlands occur on the floodplains associated with streams and as seeps on slopes. Some headwater forested wetland areas can also be found. In addition, wetlands have formed in abandoned gravel pits in the eastern end of the study area. The DEIS did not however present specific functions at each wetland site or by watershed nor does it summarize or group wetland function or impacts in any way. This insufficiency was identified by EPA during review of the advanced DEIS. No wetland mitigation plan or potential sites were included or

referenced in the DEIS, therefore as a result, EPA is unable to determine if these impacts can be offset by compensatory mitigation in the watersheds where the impacts occur.

Although not fully documented in the DEIS, the wetlands in the study area provide numerous functions important to the maintenance of the aquatic ecosystem. Both the Anacostia and Potomac basins are the beneficiary of these functions. Impacts of the ICC should be carefully evaluated for consistency with the goals of the aforementioned restoration efforts in the Anacostia River watershed.

Considering the urbanized nature of these watersheds and the downstream receptors (numerous road crossings, residential areas and recreational sites), flood control is an important function of the study area wetlands. Floodplains and associated wetlands provide a safe storage area for floodwaters to spread out and slow down. The reduction in velocity reduces downstream erosion and increases community safety by reducing dangerous flood velocities. Related to the flood storage function are water quality benefits that accrue when these lower velocity waters drop their sediment load. This not only reduces sedimentation downstream but also provides nutrients to the floodplain.

The study area wetlands are generally associated with stream valley parks and are forested. These forested wetlands, combined with the adjacent forested uplands, provide some of the largest remaining contiguous blocks of undeveloped land in Montgomery County. They provide habitat for a large diversity of plants and animals as documented in the DEIS. Many of the Threatened and Endangered species sites are associated with these stream valley parks. The unbroken nature of these tracts provide some of the last remaining forest interior bird (FIB) habitat in the study area as well. In addition, many large trees, some listed as specimen trees by the state and local government are located in these wetlands and parks.

The MPA impacts more floodplain and forested wetland area than any of the other build alternatives. Its potential to compromise the functions supported by these wetlands is therefore the greatest. For example, regarding the forest interior bird habitat, the Montgomery County Department of Parks and Planning (MCDPP) estimates that the MPA would fragment over 1,080 acres of FIB habitat (from MCDPP staff review ICC DEIS 5/23/97). Twenty seven species of neotropical migrating forest dwelling birds including permanent and winter residents are known to inhabit the vicinity of the MPA alignment. Large specimen trees, some as old as 300 years, would be taken by the MPA. Overall, the MPA will fragment large blocks of forest in Mill Creek Stream Valley Park, Rock Creek Regional park, North Branch Stream Valley Park, Northwest Branch Park, Upper Paint Branch Park, and Little Paint Branch Stream Valley Park.

The NA has the potential to impact up to 21 acres of wetlands, however this impact could be as low as 16 acres (USACOE briefing June 20, 1997) . Along the eastern portion of the NA these impacts are generally located in the upper reaches of small watersheds feeding to the Patuxent River watershed. The NA impacts fewer floodplain and forested wetlands areas than the MPA. The NA generally has more alignment options and open land available to minimize these impacts as compared to the MPA, thus it is likely that the impacts of the NA, if selected, would be less than that of the MPA and the related Rt. 28/198 connector.

Moreover, the NA does not impact three key stream valley parks and associated forested, floodplain wetlands; Northwest Branch Park, Upper Paint Branch Park, and Little Paint Branch Stream Valley Park

The MM198 has the potential to impact 10 acres of wetlands. This is the least amount of any of the build alternatives except the UERA, which as a stand-alone alternative does not appear to meet the purpose and need. Based on the data in the DEIS, EPA concludes that the MM198 may represent the least damaging practicable alternative, making it the alternative that would most likely satisfy the Section 404(b)(1) guidelines.

Neighborhood Impacts:

A partial discussion of neighborhood impacts can be found in the Socio-economic portion of Environmental Consequences (Section VI). This section under-estimates the impact of the MPA on the numerous communities it bisects. EPA does not agree that because the MPA has been planned for many years there will be less neighborhood impact. In several ways there may actually be a greater impact. The MPA will pass behind the **back** yards of numerous homes, as typified by Longmeade, (back yards are generally the most private and quiet part of a home). In other areas such as Upper Paint Branch, Northwest Branch and Rock Creek, the MPA not only replaces the existing parkland and passes near homes and their back yards but will forever separate these homes from the adjacent parkland. In place of this parkland will be a continuous noise, air pollution and litter source.

For the reasons above EPA does not agree with the conclusions in the DEIS that the MPA will have less impact to neighborhoods relative to the other alternatives. Each of the build alternatives will impact the peace and quiet, air quality and suburban character of many neighborhoods, and because of its close proximity to more homes than either the MM198 or NA (see proximity measures Section VI) and the manner in which it would separate neighborhoods from the stream valley parks system, the MPA can legitimately be considered as one of the most impacting of the three major alternatives.

In addition to a more thorough description of the intangible impacts, the number of homes exceeding the noise increase threshold and the number of homes within 200 feet of the ROW should be included in this section of the FEIS.

Additional Comments:

Purpose and Need:

The following comments are intended to place the Purpose and Need (P&N) in a context from which we may consider impacts. When EPA concurred with the Purpose and Need we agreed that a transportation solution is needed in the study area and that east-west transportation is a part of that need. We also recognized, based on the documentation at that time, that a comprehensive solution to the study areas' transportation problems is needed. While east-west transportation improvements are needed, the level of this need compared to the overall travel demand caused by the predicted 2020 build out is relatively small (east-west travel in 2020 is estimated to be only 33% of the total travel in the study area).

The P&N indicates the results of current and future widespread high density population growth which the DEIS indicates will cause worsening congestion in the year 2020 regardless of which alternative is selected. This fate indicates that a comprehensive solution that involves more than one east-west road connection will be necessary. EPA concludes that since the proposed alternatives represent only one element of the overall transportation need in the study area, that the least costly and environmentally damaging alternative should be selected. This would have the effect of saving both natural resources and money. The natural resources would not be disproportionately harmed by a partial transportation solution and the money saved could be put towards other transportation improvements.

The P&N does point out high levels of projected traffic volumes and congestion but does not clearly indicate the role of the existing development moratorium on these projections. Considering that congestion will rise higher than current levels, even with a new facility alternative, it may reasonable to assume the development moratorium will not be lifted and the predicted build out will be reduced. What effect would this have on travel demand? This issue should be explored in the FEIS.

The P&N continues to include north-south screen lines that incorporate I-495 traffic. EPA recommended this be changed during the development process for the DEIS. These screen lines are used to measure traffic passing each screen line in an east-west direction. By incorporation of screen lines that cross the beltway, east-west traffic volumes include a large percentage of traffic that would not utilize the ICC. If this information is used to estimate east-west travel demand in the study area the estimate would over estimate the real east-west travel demand in the study area. EPA recommends that I-495 traffic be removed from the screen line data in the FEIS.

Socio-economic factors:

Tax base (IV-32), business community (IV-34) and land use (IV-36) impacts: Discussion of these issues provided little quantitative evaluation of the impact of various alternatives on these factors. The discussion is general and assumptive in nature, consequently EPA can not give a great deal of weight to these issues when evaluating the alternatives. Additionally, it has not been stated that a significant economic effect would occur from the selection of any of the alternatives, even the no-build (NB). It has, however, been

stated that economic potential may be reduced (but not quantified) if the NB or UERA are selected and it has been stated that the no build may result in an economic benefit around the Metro Stations (IV-46). On balance, from the data presented in the DEIS, we have concluded that economic issues do not appear to be key factors in the selection of an alternative.

Land use sensitivity test:

Existing and future land use, land use planning and land use impacts are issues discussed throughout the document. To help facilitate a better understanding of the role current and future land use plays in east-west traffic demand, a land use sensitivity analysis was performed. This is principally discussed in Section IV, Environmental Consequences. The discussion of this issue is incomplete in describing this analysis. The alternative land use inputs need to be defined in this section and more explanation as to why east-west travel demand is not sensitive to the changes in the alternative inputs needs to be provided in the FEIS. The discussion on page II-60 of the Alternatives Section is somewhat more complete regarding why east-west travel demand is not sensitive to the land use changes. This information should also be presented in this section to more completely explain the results. However, nowhere in the DEIS was found a description of the alternative land use scenarios.

Local officials have long contended that the MPA should be implemented because it is the only alternative that has been included in the County Master plan. However, no discussion of the land use implications of the NA was found in the DEIS. From previous conversations with Senior Technical Team (STT) members and from the DEIS, EPA is left with the impression that although some effects such as the development of commercial sites near the highway are inevitable, that wide spread induced growth is not likely. This is further supported by the fact that the section of the NA that is different from the MPA (therefore not included in and controlled by the County Master plan) is largely in the protected Patuxent River watershed. This protection lends more available control over the nature of development in this area. This would minimize adverse induced or unplanned growth in the study area as a result of the NA being selected.

Tolls/HOV:

Transportation and air quality modeling for the MPA and NA have assumed that both tolls and HOV lanes would be an integral part of the project. However, the DEIS does not include a commitment to implement either of these. It has also been stated in the DEIS that the NA and MPA would have 10-15% higher volumes if tolls were not included. What would be the corresponding effect on LOS on the facility and on the local roads and other measures of effectiveness if tolls or HOV are not implemented? EPA believes that tolls and HOV should be made a commitment in the FEIS or conversely transportation and air quality should be modeled without them and included in the FEIS.

Alignment suggestions:

Several modifications to the NA should be considered to avoid or minimize key environmental impacts:

1) Consider the elimination of Spencerville Option 1 and 2 to avoid the low income/minority neighborhood on Baston Rd (except as modified below). While these options are not significantly better from a natural resources standpoint they do impact the aforementioned neighborhood. This impact does not appear to be necessary to address wetlands or other issues and can be avoided.

2) To avoid the Edgewood II Section 4(f) site, develop a new option that would take off from the base option west of Batson Road heading westward to intersect the Spencerville Option 1 and Oak Hill Road., then follow Spencerville Option 1 to Rt. 650.

3) The Norwood Option and the Norbeck Option 2 of the NA appear to minimize wetlands and flood plain impacts.

The MM198 crosses the Paint Branch watershed east of Spencerville. EPA recommends SHA explore the use of the NA base alignment from Rt. 29 west to Rt. 650 (using the NA Edgewood avoidance option described above).

Transportation Impacts:

Table 1, adapted by EPA from data found in the DEIS, shows a comparison of numerous factors for three of the build alternatives, (for each factor the best performing alternative has been highlighted). As can be seen from this table, the transportation benefits of the various alternatives over the no-build are mixed. For example, considering enhanced east-west mobility (a measure of effectiveness in the DEIS) on the existing arterials, under the no-build, traffic on east-west arterials increases by 2%, while under the NA these volumes are reduced by 12.6%, the best performance of all alternatives (From Table VI-4, DEIS). Another analysis (from Table VI-5, DEIS) indicates that the MPA improves the most arterial network links at 77%, yet the LOS actually worsens relative to the no build on 23% of the arterial links studied. The NA functions best for average travel time savings and reducing VMT on local roads. The NA and MPA are very similar in function and neither appears to be clearly superior from a transportation point of view.

Comparing total volume of east-west travel on all roads, the MM198 alternative increases total east-west traffic the most, with a 4.3% increase over no-build. The MM198 operates at poor LOS when compared to the freeway alternative (NA and MPA). The MM198 is the best performing alternative for two of the eleven transportation measures Shown in Table 1, for an additional four measures it is better than 70% as effective as the best performing alternative for that measure, and for 6 of the 11 its is better than 50% as effective. Considering that the cost is less than one half of the freeway alternatives and it functions better than 50% as well for 8 of the 11 measures of effectiveness, the MM198 as presented in the DEIS appears to be a relatively cost-effective solution.

EPA recognizes that the MM198 has the potential to be functionally improved (perhaps considerably) with some modest and targeted flyover ramps or with other enhancements to improve the flow of the major turn volumes at each intersection. This would in effect improve the overall LOS of this alternative making it more viable. Specific recommendations regarding design changes to MM198 have been provided by the Corps of Engineers (see Corps of Engineers Letter, Linda Morrison, COE to Alan Straus, SHA). EPA recommends that these design changes be included in the FEIS or, if necessary, described in a supplemental DEIS.

On page VI-14 it is acknowledged that none of the ICC alternatives will solve all the traffic problems. Considering that the MPA results in improvement to only 6 PM and 9 AM intersections (of 54 studied) operating at LOS E-F over the no-build (DEIS, Table VI-7) and has virtually no effect on freeway segment LOS (DEIS, Table VI-10) over the no build, and has no effect on the percent VMT on local roads, EPA concurs with this view. Congestion will continue to worsen regardless of the alternative selected. It is clear that a more comprehensive solution to the areas transportation problems is required. Considering that the MPA only improves the transportation situation partially and given the large environmental cost of the MPA, EPA does not believe the MPA is justified. EPA recommends the selection of a less damaging alternative that can be combined with other transportation fixes to provide a more comprehensive and less harmful solution.

Air impacts:

More justification is needed to support the assumed (1.7 ppm) 8-hour CO background concentration used in the modeling. In areas with some development and small towns nearby, a value of about twice that concentration would be more typical, unless justification can be provided that a somewhat lower value is acceptable. In this case, background concentrations based upon readings from an air quality monitor are referred to, and if those monitored values are to be acceptable, it needs to be demonstrated that the monitor is situated in a location similar to the locations of highest potential ambient localized CO concentrations (CO "hotspots").

A second concern regards modeling at those CO "hotspots". In any CO modeling analysis, modeling receptors must be placed at the worst potential hotspots; e.g., at roadway intersections with the worst

combinations of heavy traffic and poor levels of service. That is to assure that the highest potential CO concentrations are revealed in the analysis. Contrasted with that, the DEIS states that the "noise" receptors were chosen to also serve as air quality receptors. That is not appropriate. The locations with greatest traffic noise are typically characterized by free-flowing, relatively high speed, traffic and relatively low CO concentrations, whereas the highest CO concentrations are found at locations where traffic is slowest, and noise typically lower (i.e., near poor level of service, heavy traffic locations as mentioned above).

References

Council on Environmental Quality. 1997. Incorporating Biodiversity Considerations into Environmental Impact Analyses Under the National Environmental Policy Act.

Wiegand, Richard, Paula Becker, Chris Fleming and John Parrish. 1997. Inventory of Rare, Threatened and Endangered Plant Populations and Significant Habitats on Select M-NCPPC Parklands In Montgomery County, Maryland.

TABLE 1

Comparison of the three most viable alternatives for the ICC (from Section VII Comparison of Cost/ Benefits and Financing, DEIS 4/97) The best performing alternate is in bold.

Effectiveness Measure	Master Plan Alignment (MPA)	Northern Alignment (NA)	Mid County Alignment (MM198)
Intersection LOS (PM) % improved	46%	39%	17%
Average Travel Time Savings across study area	40%-50%	45%-50%	25%-35%
Reduction in vehicle hours of delay	16.7%	12%	1.5%
Employment Accessibility: increase in number of jobs within 45 min of home (% change from NB)	+20.8%	+18.8%	+14.6%
Change in arterial traffic volumes over NB	77% better, 23% worse	74% better, 25% worse	67% better, 33% worse
VMT on LOS A-E links (change from NB) *	28%(+21.8%)	27%(+17.4%)	26%(+13.0%)
Total VMT change from NB *	+9.1%	+3.2%	+9.9%
% VMT on local roads change from NB	0%	-4.2%	+4.2%

Transit mode share change from NB	+6.5%	+6.5%	+5.1%
Change in traffic volumes on E-W arterials	-10%	-12.6%	-7.2%
Volume of E-W traffic flow change from NB	+3.3%	+2.5%	+4.3%
ROW requirement in acre	1,153	1,248	683
Residential Displacements	30:0 minority 2 low income***	53:up to 7 minority up to 5 low income***	45: up to 7 minority 3 low income***
Business Displacements	17	22	7
Minority business displacements (% of total)***	6%	15%	14%
4(f)Parkland impacts (acres)	145	98.2	40.1
Wetland Impacts (acres)	19.1, + 4-5 for the Rt 198/28 connector=23-24	21.5	10.0
Forest land Impacts(acres)	552	492	236

Impact to trout resource	Thermal increase, channel enlargement, baseflow decrease, water quality impacts deicing impacts, sedimentation from construction.	None	None
Impervious surface increase in trout watershed (% increase)	23 acres(4%) (raises total impervious surface in Goodhope trib. from 10.4% to 11.9%)	0	0
Stream Impacts (linear feet)	29,451	31,427	15,009
Total Acreage of new impervious surface	366	407	228
State R/T/E sites	16	3	1
Specimen Tree Impacts	16	3	1
Historic Sites Adverse Effected	1	7	8
Identified Archeological Site Impacts	4 (up to 13 poss)	6 (up to 9 poss)	1 (up to 7 poss)
Air Quality Impacts: % receptor sites showing an increase in CO (2020)	100%	67%	71%

Air Quality impacts: % receptor sites showing a decrease in CO (2020)	0%	24%	29%
Noise Impacts: number of residences exceeding noise increase threshold	693	418	411
Noise impacts: number of noise sensitive areas within 200 feet	340	110	220
Estimated total cost (eng, ROW const) **	\$1,090,000,000	\$1,050,000,000	\$460,000,000

* High levels of VMT can be considered negative from a dependence on the auto and increased mobile source pollution standpoint, but also demonstrates that the roadway network can accommodate more vehicles and/or longer trips.

** A more complex economic analysis that takes into account potential toll revenues indicates that the MPA performs better over the long run, however no commitment to a toll facility has been made.

*** Minority and low income impacts not considered disproportionate

LOS = level of service, A-F, a measure of how well a road or intersection is operating

NB = no build alternative

VMT = vehicle miles traveled in a given period time, day, year

ROW = right of way

R/T/E = rare/threatened/endangered species

CO = carbon monoxide